Faculty of Architecture

IMPORTANT NOTES

If for one subject you can find several different types (lecture, practice, laboratory) of courses then please choose one and only one course from each type in order to be able to perform the subject's requirements successfully.Civil Engineering courses are on the website seperately. Courses chosen from the offer of Faculty of Civil Engineering will be checked and arranged individually by the departmental coordinator.

Subject code	Subject name	Requirement	ECTS credit
BMEEPAG0236	Applied Building Information Modelling B (Archicad advanced)	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Laboratory	EN2-ER	English	WED:18:15-20:00(K216)
Laboratory	EN1-ER	English	WED:18:15-20:00(K216)

This course aims to expand the existing CAD knowledge of students to be able to create and modify complex CAD models easily. During the course, we use Archicad, so a basic knowledge of the program is expected.

Subject code	Subject name	Requirement	ECTS credit
BMEEPAG0246	Applied Building Information Modelling A (Revit Architecture)	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Laboratory	EN1-ER	English	THU:17:15-19:00(K217)

Design and documentation with Revit Architecure - Introductory course.Design and basic CAD knowledge is recommended. (Architectural informatics 2)

Subject code	Subject name	Requirement	ECTS credit
BMEEPAG0249	Constructive CAAD CE	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Laboratory	EN1-ER	English	WED:16:15-18:00(K216)

Advanced CAD modelling course for students who are familiar with AutoCAD. The course deals with modeling concepts and techniques, texture, lighting and rendering. In the second part of the semester students work more or less autonomously (with occasional one-on-one consultations) on a model of their choice. See: http://www.epab.bme.hu/en/?ccce/

Subject code	Subject name	Requirement	ECTS credit
BMEEPEG0995	Architectural Research for Exchange Students - EG	Mid-semester mark	6

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	

Architectural Research for Exchange Students on the topics of the Department's competency. The aim of the subject is to carry out a research on a special topic. The research contains specifying and processing the related international literature, summing up the findings in a study and finally a presentation. The language of the research depends on the consultant - the available topics are listed on the department's homepage.

Subject code	Subject name	Requirement	ECTS credit
BMEEPEGA601	Building Service Engineering 2	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	MON:14:15-16:00(K285)

Calculation of heat loss of buildings. Energy consumption of a heated space. Introduction to fluid flow. Classification of Heating. Central heating. Elements of water heating system. Pipe distributing networks Emitters and surface heating. Controlling. Renewable energy sources for heating and producing domestic dot water. Introduction to psychometrics. Psychometric processes. Ventilation (Classification, natural ventilation and mechanical one, fundamental systems of air inlet and extract) Estimation of the necessary air volume. Air heating and cooling systems. Air conditioning.

Subject code	Subject name	Requirement	ECTS credit
BMEEPEGMM01	Building Energetics MM	Exam	5

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	MON:14:15-16:00(K285)
Practice	EN1-ER	English	MON:16:15-18:00

The aim of the subject is to familiarize the student with the basic building engineering and energetic concepts and simplified building engineering sizing that occur during architectural studies and later work. The student acquires further knowledge in the fields of heating technology, air conditioning technology and renewable energy. The subject's matter prepares the student by applying the knowledge acquired here, enables to solve complex and unique building engineering and energetic tasks. Based on the competencies described in the topic requirements, based on the knowledge acquired in the Building Energetics subject in the architectural engineering training, the student is “Able to determine the adequate mechanical system for an energy efficient design of the building including heating, ventilation and air conditioning”

Subject code	Subject name	Requirement	ECTS credit
BMEEPEK0633	Facility Management	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN1-ER	English	TUE:14:15-16:00(K350)

The goal of the subject is to present theory of Facility Management, introduction of Cost Efficiency concepts. Based on case studies and several site visits on commercial properties, list of managerial tasks will be indentified and explained as registration, maintenance, crisis management and others. The course also will cover related subjects as Workspace Planning and CAFM (Computer Aided Facility Management).

Subject code	Subject name	Requirement	ECTS credit
BMEEPEK0995	Architectural Research for Exchange Students - EK	Mid-semester mark	6

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	

Architectural Research for Exchange Students on the topics of construction technology and management. The aim of the subject is to carry out a research on a special topic. The research contains specifying and processing the related international literature, summing up the findings in a study and finally a presentation. The language of the research depends on the consultant - the available topics are listed on the department's homepage.

Subject code	Subject name	Requirement	ECTS credit
BMEEPEK5008	Computer Aided Project Management	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN1	English	

The aim of the subject is to give an overview about the IT tools, softwares and algorithms that can support the construction projects, let them be management or process related. We introduce the latest applications in theory and practice.

Subject code	Subject name	Requirement	ECTS credit
BMEEPEKA701	CM3 - Planning of Construction Technology	Exam	4

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	WED:12:15-14:00(K221)
Practice	EN1-ER	English	WED:10:15-12:00(K211)

The goal of the subject is to present information on the planning of elementary construction technologies related to superstructures and finishing work.The subject introduces how to apply recent innovations of building technologies during design and realisation. It gives a basic knowledge to evaluate construction options and make appropriate decisions about technology. There are case studies of building technologies used in construction of loadbearing structures, finishing and cladding works.The practical part contains workshops on planning of construction technologies: connection of structures and technologies, volume calculation, resource estimation, scheduling and construction site planning.

Subject code	Subject name	Requirement	ECTS credit
BMEEPEKA801	Building and Architectural Economics	Mid-semester mark	2

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	WED:08:15-10:00(K285)

Aim: investigate the economic side of a real estate development emphasizing the Social cost and benefit of development.This module concentrates economical computation models, theories dealing with real estate valuation. There is a homework concerning with calculation, valuation of a real estate development. Successful submission is

required for the module acceptance. Written mid-semester test as indicated, minimum pass grade required. Following main topics are discussed: construction cost, estimates, time value of money, building life cycle cost , measuring the worth of real estate investments.

Subject code	Subject name	Requirement	ECTS credit
BMEEPEKAT41	Construction Management	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	WED:12:15-14:00(KF88); WED:12:15-14:00(KF88)
Practice	EN1	English	THU:14:15-16:00(K375)

Curricula, themes, individual projects, tests, subjects of lectures and seminars of the Course are embracing managerial and organizational learnings useful and necessary for all civil engineers, such as: - jobs and organizational structure of Contracting Construction Trade; - jobs and relations of parties collaborating in executing construction projects;- time and resource needs of executing construction projects (basic methods and terms of time -, resource- and cost estimates);- basics of mechanizing Construction, construction equipments and auxiliary plants, typical applications;- organizing construction site (site layout designs).Individual project: Organizational plans (time estimates, resources calculations and site layout designs) of building a simple linear structure (reinforced concrete retaining wall) well known in practice of all civil engineers.

Subject code	Subject name	Requirement	ECTS credit
BMEEPESA201	Building Constructions 1.	Exam	4

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	MON:08:15-10:00(K350)
Practice	EN1-ER	English	TUE:08:15-10:00(K285)

This subject presents the details of the main load-bearing constructions (walls, floors, stairs) and the joints between them. Wall supported / skeleton frame, or mixed construction.Walls: Effects on walls, and how to fulfil the requirements. Sorting the walls by function, position, material, by layer-order. Walls built from elements, the development of walling elements.Floors: Functions, effects on floors, how to fulfil the requirements. Elements of floor construction. Types: plain floors (in details), arches (overview). The materials, construction lines, building methods, About the future of floors Joints between walls – floors, skeleton frames – floors. Methodology of the floor design.Stairs: Functions, effects on staires, how to fulfil the requirements, principles of stressing and how to choose construction. Sorting the constructions by material, load bearing method, building method … etc. Design possibilities.

Subject code	Subject name	Requirement	ECTS credit
BMEEPESA401	Building Constructions 3	Exam	4

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	WED:17:15-19:00(K344)
Practice	EN1-ER	English	FRI:08:15-10:00(K392)

General and detailed review of the structures of the elevation constructions. The most important aim of the subject is the analysis of the external separating constructions. Principles of the continuity of the protecting levels depending on the position in the structure. Multi-layer external separating walls, construction methods of the elevation claddings and elevation coverings, the ordinary and special external doors and windows. Complementary structures for the external doors and windows, especially the shading devices. Requirements for the external separating structures and performances of the different constructions. Building physics: heat and vapour physics, acoustic features of the external separating structures.

Subject code	Subject name	Requirement	ECTS credit
BMEEPESOs00615-00	Acoustic comfort	Mid-semester mark	2

Course type	Course code	Course language	Timetable information
EA	EN0-ER	English	THU:14:15-16:00

The aim of the course is to present acoustic comfort as an architectural design aspect that is necessary for the function of the building, to shape the architectural design mindset, to promote the creation of quality, modern buildings, to present the objectively measurable and subjective factors determining acoustic comfort, to illuminate the relationships between the characteristics determining acoustic comfort and other design objectives, and to clarify the connection between building function and acoustic requirements.

Subject code	Subject name	Requirement	ECTS credit
BMEEPESOs7Q801-00	Environmental Friendly Building Constructions (Building Constructions 7.)	Exam	4

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	TUE:08:15-10:00(K353)
Practice	EN1-ER	English	TUE:12:15-14:00(K345)

Subject code	Subject name	Requirement	ECTS credit
BMEEPESQ602	Building System Methodology (Building Constructions 5.)	Mid-semester mark	4

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	TUE:10:15-12:00(K344)
Practice	EN1-ER	English	MON:10:15-12:00(K344)

Subject code	Subject name	Requirement	ECTS credit
BMEEPET0408	History of Theory of Architecture 2	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN1-ER	English	THU:13:15-15:00(K393)

HISTORY OF THEORY OF ARCHITECTURE 2.
BMEEPET0408
The course presents, exposes and explains the most important constituent facts, selected from the innumerable different intellectual reflections of the twentieth century and the second millennium, as a rich and simultaneous interplay of parallel stories, either promoting, or opposing each other. It doesn’t interpret history as a homogeneously evolving story, emerging from the past, but at the same time, it doesn’t deny the importance and operative function of creating histories. Instead of a simple, successive presentation of well-known historical facts, or a collection of fashionable notions, topics and themes, it rather concentrates on exploring their synchronic functional relationships and finding creative and relevant conclusions.

1. Introduction, theory and history in the 20th century.
2. Dominant modern reflections: Riegl, Loos Corbusier
3. Science, technology, art, future, constituent parts of the modern identity
Submission and discussion of first paper.
4. Great histories of modern architecture. History, or theory?
5. The destructions of modern technologies. Totalitarian regimes, and the war. Post war time, neo-technicism and total utopias of the sixties, Banham, Archigram.
6. Rediscovery of the operative function of history. Kahn, Venturi. Vulgar modernism and vulgar historicism.
Submission and discussion of second paper.
7. The global, the regional, the rural, the archaic. Structuralism, accidentism.
8. Positive and negative side of modern urbanism.
9. Beyond modern histories. Critical theories anthologies. Presence and representation. Deconstruction, phenomenology, hermeneutics.
Submission and discussion of third paper.

Subject code	Subject name	Requirement	ECTS credit
BMEEPET0801	Hungarian Historic Buildings in Context	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	TUE:10:15-12:00(K285)

Subject code	Subject name	Requirement	ECTS credit
BMEEPET0995	Architectural Research for Exchange Students - ET	Mid-semester mark	6

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	

Similarly to the international practice, the course aims research activity in architecture and its documentation primarily. The research topics' possible horizon is determined by the course lists of the departments and the students' interest. Besides the architectural topics, the course will appreciate interdisciplinary and special fields in the international environment. The project work will demonstrate generic and specific skills and understanding of the research's open and synthetic character. The objective of this course is to hone the skills of analysis and abstraction in order to develop a framework for research. The student should be able to draw from precedent in the art, architecture, and engineering in the development of this framework, which will act as scaffolding for the theoretical, experimental, and creative decisions. This course will consist of a series of consultations with the teachers, but the essay should write by the student. The available topics are given by the Departments of the Faculty. The student can also propose a special topic for research during the course, but the teacher must be agreeing with the proposal. The available topics are listed on the department's homepage: http://www.eptort.bme.hu/

Subject code	Subject name	Requirement	ECTS credit
BMEEPETA201	History of Architecture 2. (Antiquity)	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	WED:14:15-16:00(K285)
Practice	EN1-ER	English	WED:16:15-17:00(K285)

The intended task of the subject is to investigate the evaluation and formation of the European architecture of the four main cultures as Mesopotamia, Egypt, Greece and Rome. Before introducing to the evaluation of architecture we are speaking the used building materials and the structures involved. The presentation of architecture follows chronological order, analysing the functional expectation of the building types used. In Mesopotamia we discuss the space demands of the sacral, the dwelling and the palace architecture. The analysis makes possible to prove the early use of space systems in architecture. The accented topic in Egypt is the evaluation of monumental architecture in stone. It is important to understand, that the later funerary buildings are not unique architectural constructions, but part of a composition. The Hellenic and the Roman civilisation is basically an urbanistic culture. That is the reason, that both cultures are discussed through their developments in settlements. The analysis of Hellenic temple construction gives opportunity to discuss the evaluation of the Greek and Roman orders.

Subject code	Subject name	Requirement	ECTS credit
BMEEPETA401	History of Architecture 4	Exam	3

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	MON:12:15-14:00(K221)
Practice	EN1-ER	English	MON:14:15-15:00(K221)

Brunelleschi and the early renaissance architecture in Tuscany. The evolution of the renaissance palace in Florence and in the Northern regions of Italy. The architect and scholar Leon Battista Alberti. Bramante and and the influence of his circle in the first half of the 16th century. Michelangelo Buonarroti architect. Renaissance in Lombardy and Venice. Mannerist architecture. The late sixteenth century: Palladio and Vignola. Urban development and early baroque architecture in Rome under Pope Sixtus V. The architecture of Lorenzo Bernini and Francesco Borromini. Baroque in Venice and in Piemont. Architecture in France in the 16-17th centuries. Baroque in central Europe: Austria, Bohemia and Germany.

Subject code	Subject name	Requirement	ECTS credit
BMEEPETM101	History of Contemporary Architecture M	Exam	3

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	THU:17:15-20:00(K285)

The course gives an overview of the architecture in the 20-21st centuries. The classes follow chronology with focusing on the works of some great architects: Modernism and Modern Movement. Architecture between the two world wars – De Stijl, Bauhaus, Russian Constructivism, Less is more – Architecture of Ludwig Mies van der Rohe, Toward a New Architecture – Architecture of Le Corbusier. The Nordic Classicist Tradition – Architecture of E. G. Asplund and S. Lewerentz. Alvar Aalto and the modern Finnish architecture. In the second part the course picks up some relevant architectural trends: New Empiricism, New Humanism, New Brutalism and the Team X, the way from large housing estates to architecture without architects. Unfolding post-modern architecture, participation and the Las Vegas strip, Colin Rowe’s studio, Critical Regionalism. The third part concentrates on timely problems: new materials or the multi-sensorial experience of space and surface, Rem Koolhaas’s Dirty Realism, new technology and digital perception, architecture of seduction.

Subject code	Subject name	Requirement	ECTS credit
BMEEPETO601	History of Architecture 6	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	THU:17:15-20:00

The course gives an overview of the architecture in the 20-21st centuries. The classes follow chronology with focusing on the works of some great architects: Modernism and Modern Movement. Architecture between the two world wars – De Stijl, Bauhaus, Russian Constructivism, Less is more – Architecture of Ludwig Mies van der Rohe, Toward a New Architecture – Architecture of Le Corbusier. The Nordic Classicist Tradition – Architecture of E. G. Asplund and S. Lewerentz. Alvar Aalto and the modern Finnish architecture. In the second part the course picks up some relevant architectural trends: New Empiricism, New Humanism, New Brutalism and the Team X, the way from large housing estates to architecture without architects. Unfolding post-modern architecture, participation and the Las Vegas strip, Colin Rowe’s studio, Critical Regionalism. The third part concentrates on timely problems: new materials or the multi-sensorial experience of space and surface, Rem Koolhaas’s Dirty Realism, new technology and digital perception, architecture of seduction.

Subject code	Subject name	Requirement	ECTS credit
BMEEPIPA401	Architecture of Workplaces 1	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN0-ER	English	THU:13:15-15:00(K221)

The history of industrial architecture, the history of Hungarian industrial architecture. Load-bearing structures of halls and of multi-storey buildings. Size standardization. Constructions of space separation, facades, subsytems of space separation constructions (foundations, roof structures, intermediate floors, external wall systems, finishes. Characteristic architectural requirements, social facilities. Logistics: transport, storage. From location to layout, emplacement of industrial plants. Design methodology, re-use, reconstruction. Offices.

Subject code	Subject name	Requirement	ECTS credit
BMEEPIPQ703	PRAXIS – Architectural strategies	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	FRI:14:15-16:00(K350)

Subject code	Subject name	Requirement	ECTS credit
BMEEPKO0995	Architectural Research for Exchange Students - KO	Mid-semester mark	6

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	

Similar to the international practice aims the course primary research activity on architecture and its documentation. The possible horizon of the research topics is determined by the course lists of the departments and the personal interest of the students. Beside the architectural topics will give the course an appreciation of interdisciplinary and special fields in international environment too. The project work demonstrating generic and specific skills and understanding of the open and synthetic character of the research. The objective of this course is to hone the skills of analysis and abstraction in order to develop a framework for research. The student should be able to draw from precedent in both art, architecture and engineering in the development of this framework, which will act as scaffolding for the theoretical, experimental and creative decisions. This course will consist of a series of consultations to the teachers, but the essay should written by the student. The available topics are given by the Departments of the Faculty. The student can propose also a special topic for research during the course, but the teacher has to be agree with the proposal.

Subject code	Subject name	Requirement	ECTS credit
BMEEPKOA402	Design Methodology	Mid-semester mark	2

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	TUE:14:15-16:00(K221)

Design Methodology course introduces theoretical and practical principles of architectural design flow. The point of theoretical part is to show the history and philosophical aspects of design process, while practice is mainly trained in parallel courses. Through lectures and home works students develop skills of creativity, representation and modeling the real design activities. The process of architectural design thus can be compared to an informatics system, so for making the method more clear. Practical Design Methodology is closely connected to the Public Building Design 2 course, extending it with special design aspects and details. Through analyzing existing buildings and fictional situations interesting practical problems and solutions can be introduced and discussed. Several special methods of new facilities, building reconstructions and technologically or structurally determined buildings are also presented, to gear towards understanding the need for collaboration with design partners. Because of its importance, local and global responsibility, sustainability, free access and ecological design will be touched along whole study, to understand the meaning of “fair architecture”.

Subject code	Subject name	Requirement	ECTS credit
BMEEPLA0897	Residential Design and Contemporary Competition Applications	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN	English	THU:15:15-17:00(K391)

Through the study of actual, current public commissions, this class provides a perspective on contemporary Hungarian residential building design praxis. Also, through past projects, it presents the main changes over recent years. The aim is to complement lectures in the Residential Building Design 1 course by acquainting students with as many concrete examples as possible – of contemporary Hungarian architectural creations and, primarily, of the bubbling, fertile, and often controversial world of public commissions. The highlighted standpoint and aim is for students to observe architectural praxis in today’s Hungary, even if that is through more or less successful answers to questions that are posed. Another goal is for students to develop a routine of following public commissions, as well

as an understanding of the procurement system, where to find such opportunities, and the rules and methodology regarding tenders. The hidden aim, by engaging with the given public tenders within the course, is to develop an active discourse among pupils on the basis of the evaluation and ‘judgment’ that follows.

Subject code	Subject name	Requirement	ECTS credit
BMEEPLAA201	Residental Building Design 1	Exam	2

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:12:15-14:00(K285)

The lecture series covers the theory and fundamentals of residential building design. The aim of the course is to introduce students to housing design, from historical examples to usable knowledge on functional and spatial relations in a dwelling. Thoroughout the semester lectures introduce new pieces of information with the analyses of historcally important residential buildings. Contemporary examples are used to provide deeper insights into the extremes of dwellings of the 21st century. The semester is broken up into three parts. In the first third students get an insight into the basics of residential building design. Lectures in the second third show off the anatomy of the residnetial building where residnetial functions are analised and discussed. In the final third a possible workflow of residential building design is presented. The course is based on the textbook: Residential Building Design by Dr. János Bitó, and ends with a written exam in the exam period.

Subject code	Subject name	Requirement	ECTS credit
BMEEPLAQ803	Competitions and a conscious practice	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN0	English	THU:15:15-17:00(K391)

Most architects would agree that participating in an architectural competition is a resource-intensive commitment. At the same time, participation in architectural design competitions is a means of obtaining work and expressing an opinion in architectural practice. This course aims to present the complex and often controversial system of architectural competitions and prepare students to participate in them successfully. As part of this course, students can gain insight into the theoretical and legal background of architectural tenders, engage in professional debates, and gain routine in competing by taking part in mini-competitions announced during the semester. Find more information on the blog of the course: com-lako.blogspot.com

Subject code	Subject name	Requirement	ECTS credit
BMEEPRAA405	Form and Composition 2.	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	WED:09:15-12:00(K3R5)

Form and Composition 2 is the second course in the academic unit extending over four semesters, titled 'Studio of Architectonic Thinking'. The course aims to provide students with guidance:
- from the aspect of forms: to the exploration of the interconnections between perpendicular and nonperpendicular or curved, planar and spatial architectonic compositions based on the plane (flat or curved surface) as fundamental structural and geometrical component, and to the creation of individual compositions in plane and space, employing the acquired principles;
- from the aspect of composition: to grasp the possibilities, fundamental concepts and operations of planar and spatial composition of planes;
- from the aspect of colour theory: to understand grayscale and coloured monochromaticity, the different monochromatic colour scales of the colour plane, and the context and aesthetic content of colours and the various colour systems;
- from a technical aspect: to the steps of preparing drawn linear, drafted as well as manual-digital hybrid graphics, manual and digital models, collages and visualizations;
- and from the aspect of visual communication: to further potentials and techniques of raster graphics, image manipulation, digital collage, photo montage, typography and infographics.
Projects of the semester include instructor-assisted and supervised individual and group works.

Subject code	Subject name	Requirement	ECTS credit
BMEEPRAA605	Form and Composition 4.	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	TUE:12:15-15:00(K3R8)

Form and Composition 4 is the fourth and summative course in the academic unit extending over four semesters, titled 'Studio of Architectonic Thinking'. The course aims to provide students with guidance:
- from the aspect of forms: to the potential principles of architectonic shaping, form-finding and form research based on space as fundamental structural and geometrical component in perpendicular, nonperpendicular and curved configurations;
- from the aspect of composition: to grasp the possibilities and elementary framework of spatial compositions; the compositional principles of the division of space and the possibilities of compositional

articulation of colour, texture, material and light – attributes most directly related to spatial forms.
- from the aspect of colour theory: to the application of colours in their most commonly used saturation, triad and quadriad colour harmonies in graphics, the aesthetics of realistic visualization (surface textures & factures) and its application possibilities in digital collage
- from a technical aspect: to digital or hybrid graphical techniques, and a more advanced level of creating quality manual or digital scale models; the synthesis and independent application of the various acquired form-creation skills and related visualization techniques.
- and from the aspect of visual communication: to an advanced use of raster graphics and realistic visualization or (matching to scale) abstraction of the characteristics of light and materials.
Projects of the semester include instructor-assisted and supervised individual and small-group design works.

Subject code	Subject name	Requirement	ECTS credit
BMEEPRAOs80001-00	Colour Dynamics	Mid-semester mark	2

Course type	Course code	Course language	Timetable information
EA	EN0-ER	English	TUE:10:15-12:00(K3R5)

Subject code	Subject name	Requirement	ECTS credit
BMEEPRAQ801	Visual Communication	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	THU:12:15-15:00(K3R1)

Subject code	Subject name	Requirement	ECTS credit
BMEEPST0995	Architectural Research for Exchange Students - ST	Mid-semester mark	6

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	

Architectural Research for Exchange Students on the topics of the Department's competency. The aim of the subject is to carry out a research on a special topic. The research contains specifying and processing the related international literature, summing up the findings in a study and finally a presentation. The language of the research depends on the consultant - the available topics are listed on the department's homepage.

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTA205	Strength of Materials 1	Exam	6

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	TUE:12:15-14:00(K397); WED:10:15-12:00(K397)
Practice	EN1	English	WED:12:15-14:00(K397)

Strength of Materials 1 is a compulsory engineering basic subject. The main goal of the subject is the analysis of the materials failure of frame structures and to determine the load-bearing capacity of the structural elements. We aim to explain the theoretical basis, to present examples close to the practice of architectural engineering, and to develop the appropriate skills in solving basic structural design tasks. In addition, we also extend the principles learned from statics to some special structures (e.g. arches, cables, 3D structures).

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTA405	Design of Loadbearing Structures 1	Mid-semester mark	4

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:10:15-12:00(K343)
Practice	EN1	English	THU:10:15-12:00(K343)

The aim of the course is to become familiar with the important construction and calculation methods of structural design. The main themes of the course include design of frame structures, bracing of frames, hierarchical structures; construction and design of steel and timber structures, like slabs and frames and other auxiliary elements, like railings, stairs, and furniture. The analysis focuses on both the ultimate limit state and serviceability limit state, and deals with durability and fire protection. The course prepares students for the construction of steel and timber buildings, that is related to architectural needs. Besides getting to know the structural systems, the subject also deals with the dimensioning of structural elements and provides an opportunity to learn modern computer calculation methods.

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTM101	Special Load-Bearing Structures	Mid-semester mark	4

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:12:15-14:00(K351)
Practice	EN1	English	TUE:08:15-10:00(K397)

The subject introduces the special load-bearing structures, such as large span, tall and spatial structures. We introduce the trusses, box-beams, wall-beams and arches as large span structures. We show the static behavior of tall buildings: the concept of the vertical and horizontal load-bearing structures. The behavior of spatial structures is the main topic of the semester. We introduce the RC shells, the brick-shells, the cable and textile membranes, space -trusses, grid shells

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTQ602	Special Load-Bearing Structures	Exam	4

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:12:15-14:00(K351)
Practice	EN1	English	TUE:08:15-10:00(K397)

The aim of the course is to become familiar with the special construction and calculation methods of structural design. The main themes of the course include large span structures, tall buildings, shells, and space trusses. The course focuses on construction, and deals with raw calculations for conceptional design. The course prepares students for the construction of large span trusses, Vierendeel-trusses, moment frames, deep beams, shells, membranes, cables, and space trusses, that is related to architectural needs. Besides getting to know the structural systems, the subject also deals with the dimensioning of structural elements.

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTQ605	Special Loadbearing Structures	Exam	3

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:12:15-14:00(K351)
Practice	EN1	English	TUE:08:15-10:00(K397)

The aim of the course is to become familiar with the special construction and calculation methods of structural design. The main themes of the course include large span structures, tall buildings, shells, and space trusses. The course focuses on construction, and deals with raw calculations for conceptional design. The course prepares students for the construction of large span trusses, Vierendeel-trusses, moment frames, deep beams, shells, membranes, cables, and space trusses, that is related to architectural needs. Besides getting to know the structural systems, the subject also deals with the dimensioning of structural elements.

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTQ702	Sustainable conceptual design of structures	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:12:15-13:00(K216)
Practice	EN1	English	MON:13:15-15:00(K216)

Subject code	Subject name	Requirement	ECTS credit
BMEEPSTT601	Special Load-Bearing Structures	Mid-semester mark	4

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	MON:12:15-14:00(K351)
Practice	EN1	English	TUE:08:15-10:00(K397)

The subject introduces the special load-bearing structures, such as large span, tall and spatial structures. We introduce the trusses, box-beams, wall-beams and arches as large span structures. We show the static behavior of tall buildings: the concept of the vertical and horizontal load-bearing structures. The behavior of spatial structures is the main topic of the semester. We introduce the RC shells, the brick-shells, the cable and textile membranes, space -trusses, grid shells

Subject code	Subject name	Requirement	ECTS credit
BMEEPTCEP02	Interdisciplinary, Project based Design S	Mid-semester mark	16

Course type	Course code	Course language	Timetable information
Practice	EN2-ER	English	TUE:09:15-17:00(K222); THU:09:15-17:00(K222)

Practice	EN1-ER	English	MON:09:15-17:00(K222); WED:09:15-17:00(K222)

The subject is based on the cooperation of the departments of the Faculty of Architecture. Students work in studiosin groups with individual tasks as well instructed by teachers of the departments involved. There are two design tasks to be solved during the semester, that can be chosen freely from the offered opportunities. Each task is tosolve in seven weeks. Some of the tasks are: sport hall for Olympic Games in Budapest, Dwelling Underground, Sus pension in Architecture, The Green in the Metropolitan Area (green walls, green roofs) etc.

Subject code	Subject name	Requirement	ECTS credit
BMEEPUI0901	Urban housing	Mid-semester mark	2

Course type	Course code	Course language	Timetable information
Lecture	EN1	English	FRI:12:15-16:00(K221)

see moodle:https://edu.epitesz.bme.hu/course/view.php?id=702
The seminar is related to the Urban Housing LAB of the BME Department of Urban Planning and Design:http://urb.bme.hu/urbanhousing/
The objectivesof this course are to introduce you to think critically about contemporary mass housing issues and solutions, to have an international comparison about the urban housing situation, and to make understand the complexity of mass housing development. As students arrive from different countries, the seminar uses the opportunity to learn from each other, to discover and compare several case studies. The five 4x45minute-long occasions are differentiated by geopolitical position and key topics:
Introduction / urban housing terminology / comparative research method
Post-Socialist Central European Countries / large housing estates
Western European Countries / contemporary alternative housing solutions
Post-Soviet Countries / homeownership
USA / affordable housing

Subject code	Subject name	Requirement	ECTS credit
BMEEPUI0995	Architectural Research for Exchange Students - UI	Mid-semester mark	6

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	

Architectural research for exchange and international students: with the professional leadership of the tutors of the Department of Urban Planning and Design students work on individual research topics (eg.. Urban History, Urban Tipologies, Urban Morphologies, Housing estates etc.). The course is based on individual work, with a final output of an essay.

Subject code	Subject name	Requirement	ECTS credit
BMEEPUIQ601	Department's Design 1.	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1-ER	English	THU:14:15-17:00(K364)

A special urban design course focusing mainly on urban public space design with the help of invited lecturers and landscape designer consultants. The course is a partly theoretical and partly practical where students get acquainted with special issues and problems of public space definition, basic notions and tools of public realm and public space design. In the design assignment students deal with a smaller spatial entity, where they start from the analysis of the urban problem and provide a possible solution for the publicly attainable zones in between buildings.

Subject code	Subject name	Requirement	ECTS credit
BMEEPUIQ702	Urban development: analysis, planning, management	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Lecture	EN1	English	WED:16:15-18:00(K275)

The course is a series of lectures of the eighth semester of the regular MSc curriculum and an elective course for Erasmus students, with 2 hours lecture weekly.The goal of the course is to get students acquainted with the multidisciplinary urban challenges due to the climate change, introduced by basic theoretical knowledge and illustrated with contemporary projects from all around the world. The semester will terminate by student’s power-point presentations, demonstrating the best practices from their home countries.

Subject code	Subject name	Requirement	ECTS credit
BMEEPUIQ704	Urban Activism / Community driven experiences in urban development	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1	English	MON:16:15-18:00(K390)

The elective course aims to teach students the practice of participatory design, focusing on urban public space design involving local communities. Students – after analysing the European best practices – will get experience in involving different social groups and interest-groups into the design process of a public space. The course is based

on the results from the research on the possibilities to enhance the practice of participatory design done at the Urban Design and planning department. Students will get an extensive knowledge on the international practice of participatory design, reading much of its English literature, analysing completed European public spaces designed with this method. During the practical classes, the students will make a design proposal or activity process simulation for a selected public space in Budapest, either in a dense urban context or on the spaces of a housing estate, or in a suburban situation. A group work is expected to study the capabilities of the place, the different social groups present and the possibilities to involve these locals. Students will simulate the process of participatory design, will place themselves in the position of the locals, will work on strategies to grant the collaboration needed. The process will result in a series of rules needed to gain equal possibilities of action from all social groups on the site. Students will map the real needs of locals, will get into interaction with their communities, and will find design tools to fulfil their needs. The first presentation will summarize the needs of the local groups, while the final presentation will show the finished results of the design process. Both presentations need to be handed in digitally the final grade is a result of the evaluation of both.

Subject code	Subject name	Requirement	ECTS credit
BMEEPUIQ705	Urban Landscape / Garden and Landscape Design in the Perspective of Architecture	Mid-semester mark	3

Course type	Course code	Course language	Timetable information
Practice	EN1	English	FRI:12:15-16:00(K221)

The urban landscape is an interdisciplinary theoretical concept in which the concepts of landscape, open space, and garden architecture appear in close symbiosis with architectural and urban architecture approaches. For this reason, interdisciplinary interpretations of the concept can be developed primarily in the interprofessional dialogue, from the comparison of different positions and visions. The aim of the subject is the complex interpretation of the concept of the urban landscape, the search for connections between the concepts of architecture, urban architecture and related disciplines. In its multi-scale methodology, the subject examines the interpretation of the urban landscape as both an ecological and social issue. During the semester, the emphasis is placed on the theoretical and practical problems of the urbanized landscape, interprofessional dialogue with invited specialist speakers, and joint site visits.The theme of the course analyzes the transformation along the three lines of "positions, visions, concepts", which can also be understood as a model of landscape theory, through which the urbanized landscape and the green areas and gardens appearing in the urban environment can be examined from the viewpoints of different disciplines (landscape architect, garden designer, urban architect, architect, etc.) , problems of parks. Contemporary horticulture and landscape architecture projects are presented by invited speakers, with particular attention to their practical experience gained during creative work. On each occasion, the theoretical perspectives of the urban landscape are shaped by a series of scale changes emerging from different concepts. The concept of the urbanized landscape appearing in the contemporary literature directs attention to the new qualitative dimensions that try to interpret the changes in territories that are becoming malleable, borders that are blurring, and territorial identities that are getting mixed up. The ever-changing, ever-changing landscape, the ever-stronger landscape-shaping role of humanity requires new approaches to the relationship between landscape and architecture.The motto of the subject also assumes the active participation of the students, in connection with the topic of the lectures, during the semester it is possible to present individual analyzes of the raised landscape problems. The core of the occasions is shaped by joint conversations and the discussion of different points of view arising in connection with the topics.

Subject code	Subject name	Requirement	ECTS credit
BMEEPUIQ801	Sustainable and livable city	Exam	3

Course type	Course code	Course language	Timetable information
Lecture	EN0	English	THU:08:15-09:00
Practice	EN1	English	THU:09:15-10:00

The primary aim of the course is to introduce architecture students to sustainability issues at the architectural and urban design scale, and to provide practical knowledge that will help them to apply theories to practical architectural and urban design tasks. In addition to the issues of livability and sustainability, the subject will address the holistic issues of climate change, possible strategies for addressing it and how it is reshaping our perception of cities and the built environment. It will feature guest speakers from renowned authorities in the field. In addition to the theoretical lectures, a practical exercise will be carried out to assess a specific project (e.g. a complex plan) according to a rating system.